



SENIOR CITIZEN MONITOR SYSTEM

TEAM IO-SENIOR

FALL 2018

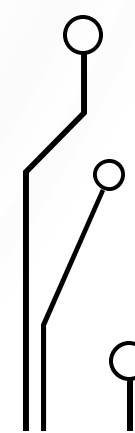
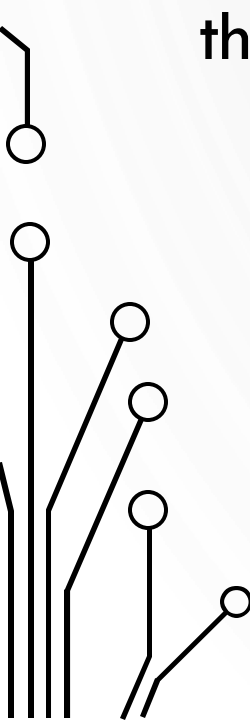
CLIENT: JAMES FRENZEL

SPONSOR: KENNETH CORBETT ENGINEERING




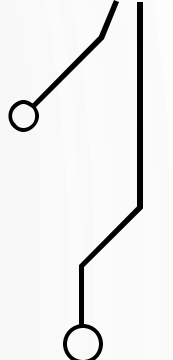
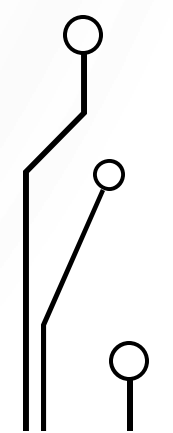
OBJECTIVE

This project aims to develop a system to help people remotely monitor an elder family member that lives alone in a non-intrusive style.



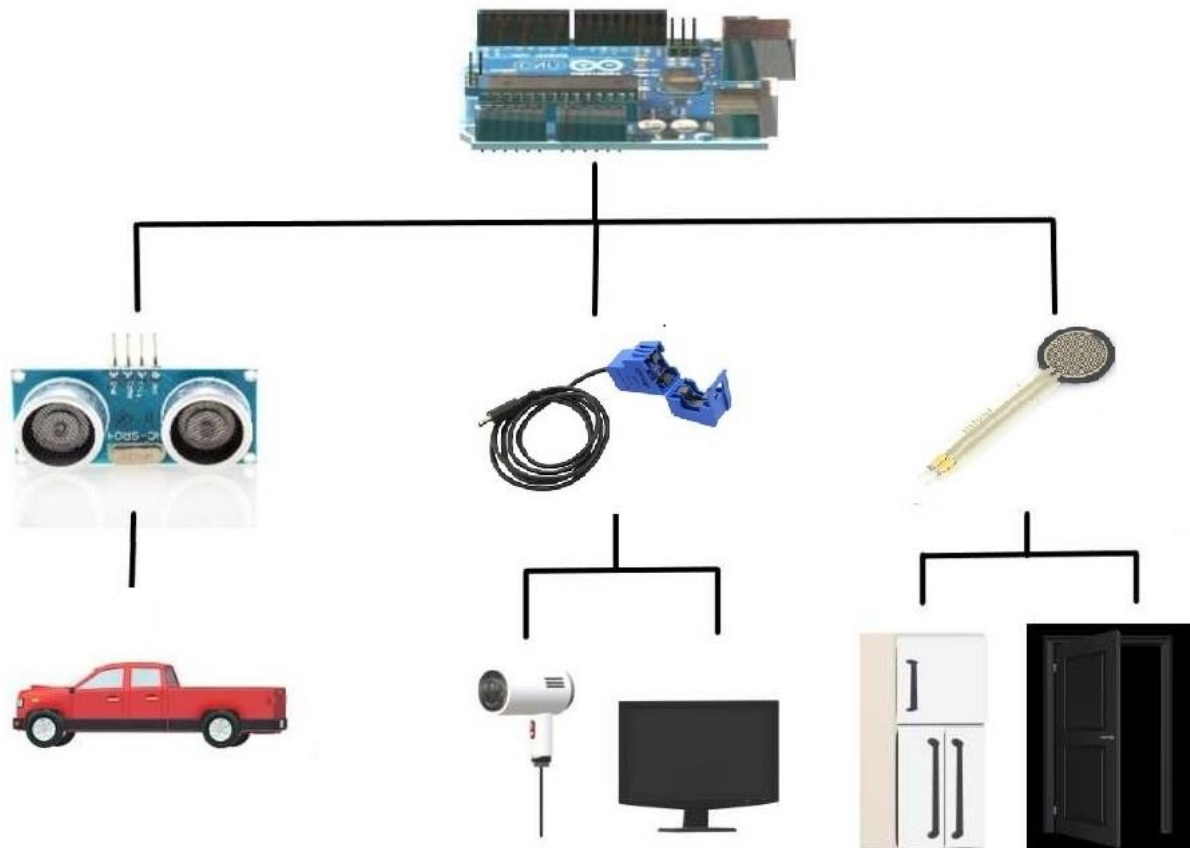


Customer Needs

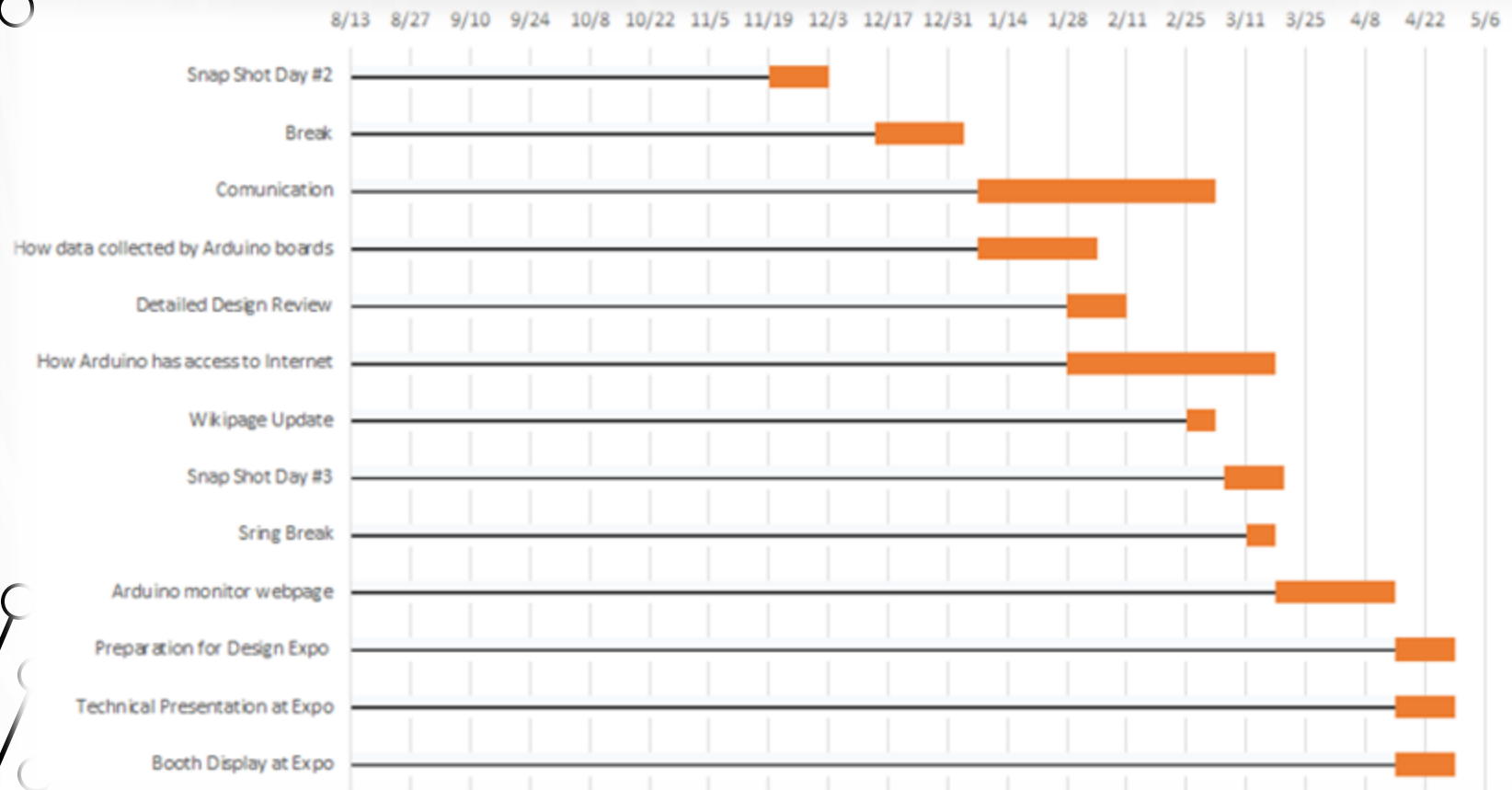
- Discreet
 - Non-obtrusive
 - Low-cost (budget \leq \$500)
 - Remotely accessible data
 - Requirements
 - User should have an easy time getting to and reading data from the system.
 - No video and audio monitor, or any other types of obtrusive monitoring ways.
 - Devices should be low power or outlet supplied.
 - System should be easy to set up and configure.
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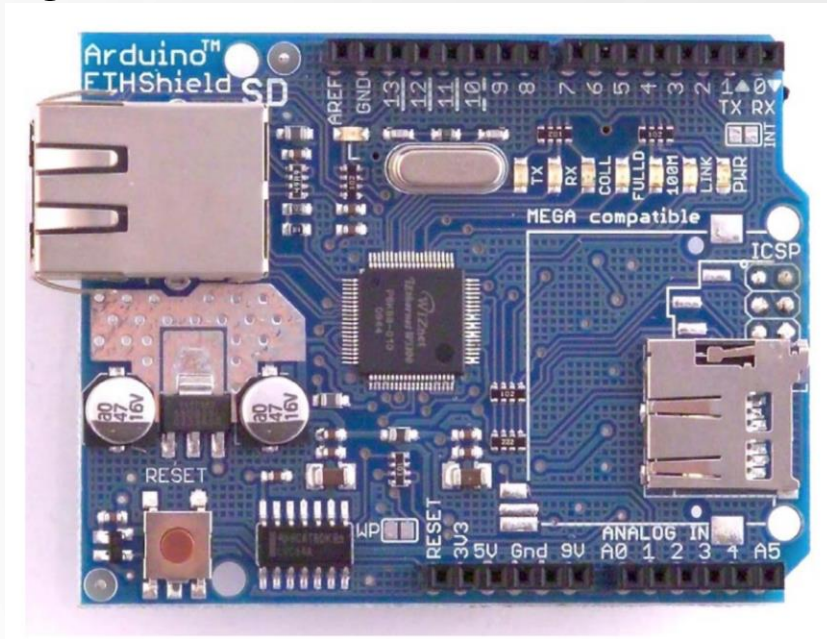
Product Requirements	General Requirements	Spec Requirements
The occupant's life should not be disturbed.	System should not be noisy. Items should better be set up with disguise.	Camera, Fit-bit, etc. are not accepted. Record home power usage is useful.
Remote monitoring.	Users can get the information from Internet.	Making a webpage could be possible.
Products should be designed for people in general.	Low-prized, good applicability.	
Easy powered.	Battery operated/Outlet	
The budget is under a thousand dollars.		

OVERALL CONCEPT



TEAM SCHEDULE





ETHERNET SHIELD

The Arduino Ethernet Shield allows an Arduino board to connect to the internet.

Simple connectivity
and data placement to
the web



SLEEPING MODE



Why we need this?

- Extend battery life

How can it work?

- Periodically enter Power-down sleep mode

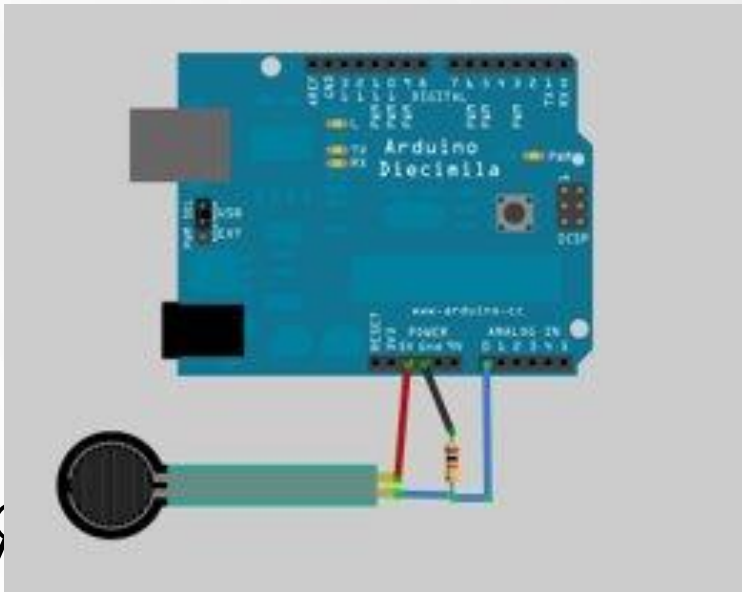
This can save 50% of power

CURRENT TRANSFORMER (C.T.)



- Obtain data on whether the domestic electrical appliance is operating or not.
- Can handle large current even in house usage.

FORCE SENSITIVE RESISTOR



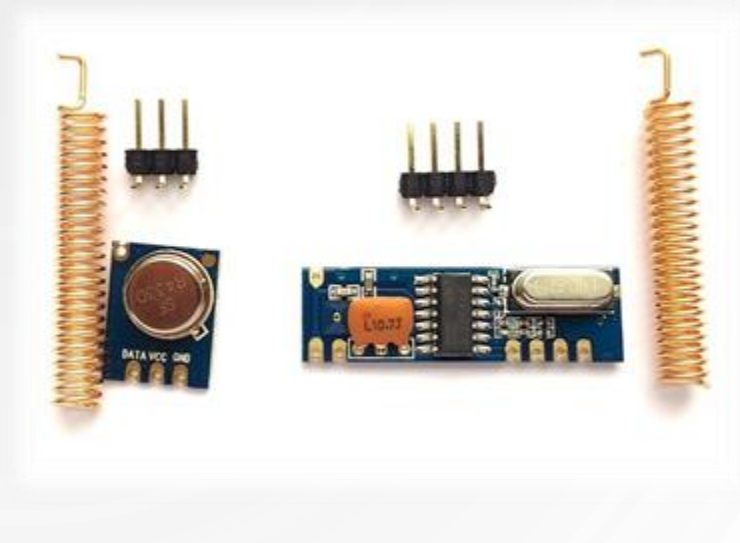
- Purpose
 - Detect whether the fridge is open to make sure the safety of the electrical device
- Advantages
 - Affordable
 - Stable and high efficiency which has no side effect on disturbing daily life

COMMUNICATION OPTIONS FOR CONNECTING DEVICES

XBEE



433MHZ ASK RF



Sensor Data is collected then logged on a base station for remote access